

12 dB Coupler

5 - 1800 MHz



MACP-011119

Rev. V1

Features

- 12 dB Coupling Ratio
- Surface Mount Package
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- Available on Tape & Reel

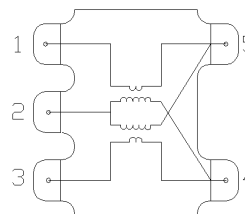
Applications

- CATV / Broadband

Description

The MACP-011119 is a 12 dB broadband coupler in a surface mount package.

Functional Schematic



Pin Configuration³

Pin #	Function	Pin #	Function
1	Input	4	External 75 Ω
2	Ground	5	Output
3	Coupled		

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1800 MHz, T_A = +25°C, Z₀ = 75 Ω, P_{IN} = 0 dBm

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling (pin1-3)	5 - 1800 MHz	dB	11.5	12.0	12.5
Main Line Loss (pin1-5)	5 - 1225 MHz 1225 - 1800 MHz	dB	—	0.9 1.1	1.2 1.5
Input Return Loss (pin1)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 18	22 22	—
Output Return Loss (pin5)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 17	23 19	—
Coupled Return Loss (pin3)	5 - 100 MHz 100 - 1800 MHz	dB	14 15	16 18	—
Isolation (Pin1-4)	5 - 1225 MHz 1225 - 1800 MHz	dB	31 29	36 32	—

Ordering Information^{1,2}

Part Number	Package
MACP-011119	2000 piece reel
MACP-011119-TB	Sample Board

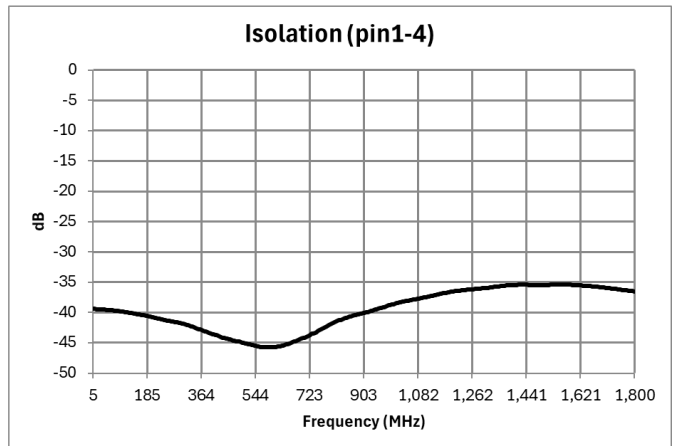
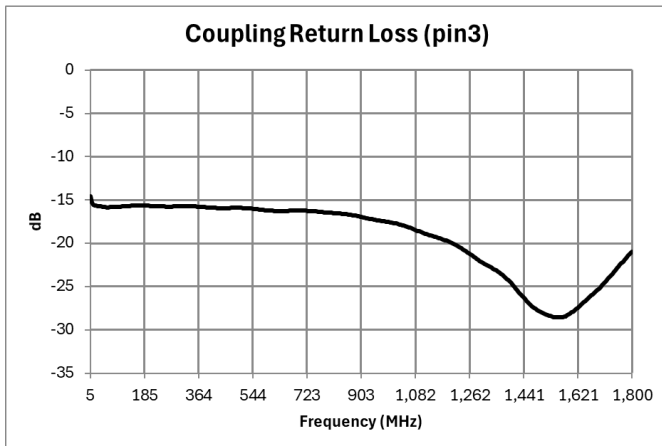
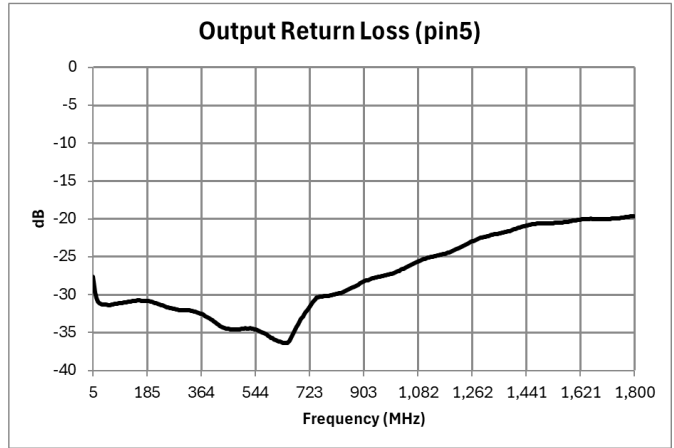
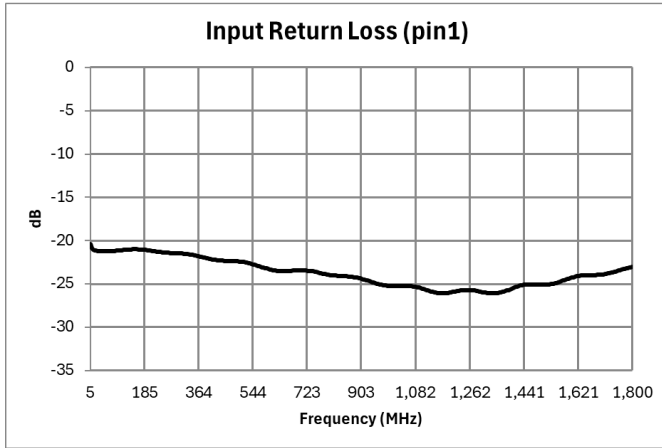
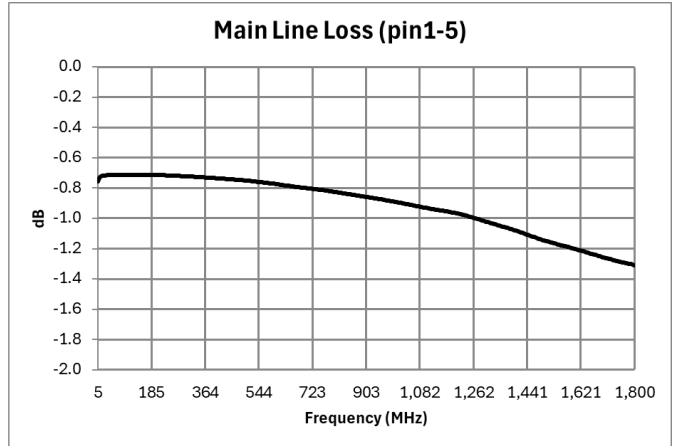
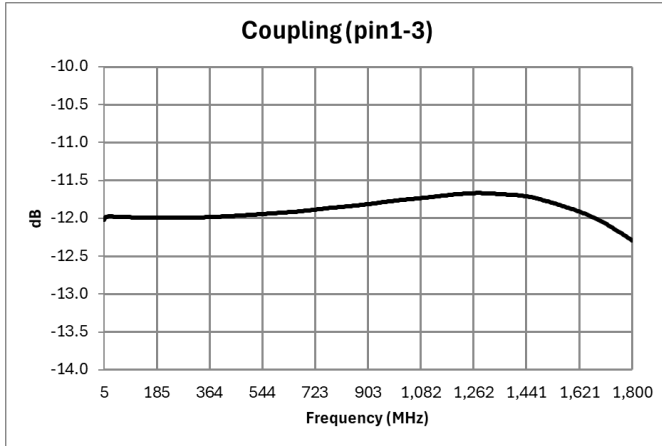
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

Typical Performance Curves



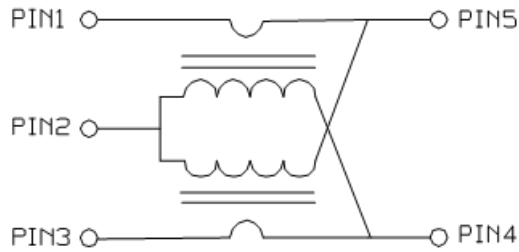
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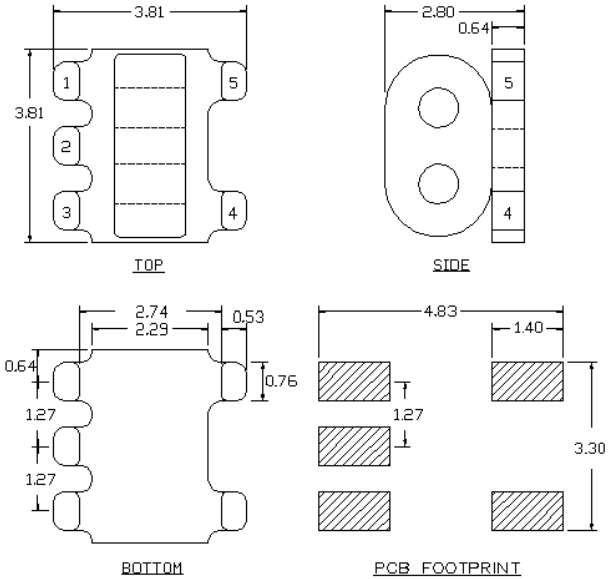
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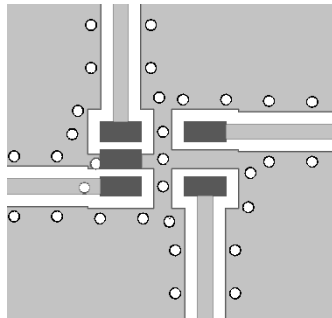
Application Schematic⁶



Outline Drawing^{7,8,9,10}



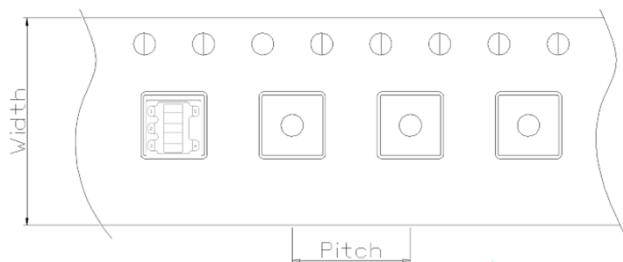
Recommended Board Layout⁷



6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

- 7. Dimensions in mm.
- 8. Tolerance: ± 0.2 mm unless otherwise noted.
- 9. Model number and lot code printed on reel.
- 10. Finish: Electroless Nickel Immersion Gold.

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	—	2000
Reel Size	mm	330
Tape Width	mm	12.0
Pitch	mm	8.0
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024-May-07	Production Release

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